

Part III consists of a glossarial index, including English names. Although the preface states that this edition has been enlarged to bring in colonial and American names of plants, yet the absence of such names as *Dryopteris*, *Stenanthium*, *Philotria*, *Filix*, and *Gyrostachys*, as well as scant mention of American works in his bibliography, suggests that the author is not very familiar with our manuals or journals. Nevertheless, this dictionary, especially as regards plants growing outside of our region, may be commended as a very convenient and valuable reference hand-book for American teachers and students.

TRACY E. HAZEN

BARNARD COLLEGE,  
COLUMBIA UNIVERSITY

## PROCEEDINGS OF THE CLUB

JANUARY 27, 1909

The meeting was held at the Museum of the New York Botanical Garden at 3:40 P. M., President Rusby in the chair. There were 17 persons present.

After the reading of the minutes of the meeting of January 12, Mr. Fred. J. Seaver was nominated for membership.

The President appointed the following committees for the year 1909.

*Finance Committee:* Addison Brown and H. M. Richards.

*Program Committee:* Fred. J. Seaver, Tracy E. Hazen, Miss Jean Broadhurst, Charles L. Pollard, and Mrs. E. G. Britton.

*Field Committee:* Norman Taylor, E. B. Southwick, and Wm. Mansfield.

*Committee on Local Flora:* N. L. Britton, Chairman; *Phanero-gams*, — N. L. Britton, C. C. Curtis, Eugene P. Bicknell, K. K. Mackenzie, E. S. Burgess, and E. L. Morris. *Cryptogams*, — Wm. A. Murrill, Mrs. E. G. Britton, Tracy E. Hazen, M. A. Howe, and Philip Dowell.

The scientific program consisted of two papers of which the following abstracts were prepared by the authors.

“Studies in the Embryology of the Mistletoe, *Dendropemon*”, by Miss Mary M. Brackett.

This study was made from two species of Loranthaceae — *Dendropemon caribaeus*, gathered by Prof. F. E. Lloyd from lime trees in Dominica, and *Dendropemon parvifolius* collected by the writer from the bitter-broom, *Baccharis*, at Cinchona, in the Blue Mountains of Jamaica.

The flowers of *Dendropemon* are perfect, regular, and symmetrical. The buds form in clusters of three in the axils of the leaves, and are protected by bracts. The corolla consists of six petals, which, in *D. parvifolius*, are of a reddish color on the outside, and a delicate pink within. There are six stamens borne upon an inferior ovary, the three fertile stamens alternating with three sterile stamens. The flower has one style and one stigma. At the top of the ovary is the cup-shaped calyculus.

At the time that the corolla and stamens appear as rounded knobs, two carpellary leaves meet over a central placenta, forming a cavity. The carpellary and placental tissues gradually unite, filling the cavity. Growth in the length of the pistil begins to be rapid, and the stamens develop. During this time cell division is going on in the region of the nucellus. There is, however, nothing to mark the development of an ovule as a distinct organ, nor is there any indication of integument. In the center of the ovary the cells increase in number and size and contain large nuclei. They elongate parallel to the main axis, become irregular, and constitute the archesporial tissue. Their growth is accompanied by periclinal division in the adjacent cells. Several large archesporial cells form megaspores; the neighboring cells become disorganized and gradually disintegrate. Apparently only one of the megaspores becomes an embryo-sac.

The embryo-sac was not made out in these species, but a long slit was observed reaching from the center of the ovary into the tissues of the style, which it seemed, had been occupied by the embryo-sac. Of this Hofmeister says (*Neue Beitrage zur Kenntniss der Embryobildung der Phanerogamen*, 539, 1859). "The growth in length of the embryo-sac is not ended with its formation. The sac makes its way through entangled cells of the closed style to a quarter of its length upwards."

Young stages of the proembryo were observed composed of

four, and then of six cells in two parallel rows, with the long suspensor, of three greatly elongated cells, reaching into the tissues of the style for nearly half its length.

The embryo occupies a vertical position in the center of the berry, and from its position in the surrounding tissue, suggests all the characters of an orthotropous ovule. As the embryo develops, it is surrounded with endosperm. A change in the nature of the tissue below the embryo suggests a series of conducting cells between the embryo and the starch-filled cells in the lower part of the ovary. The cotyledons become green, and the suspensor gradually disappears, except for a few capping cells at the anterior end of the embryo, which now occupies the ovarial cavity for almost its entire length.

The points of particular interest are: the rapid disintegration of the cells of the gynoeceium before and after fixation, the lack of an ovule as a distinct organ, the lack of integument, and the green color of the embryo as it lies in the berry.

“Botanical Observations in Iceland and Spitzbergen”, by Miss Julia T. Emerson.\*

Dr. Britton showed a photograph of a new and interesting cycad collected by Dr. MacDougal and Dr. Rose in Tomellin Cañon, Mexico, in 1906. The plant was sent to the New York Botanical Garden and installed in the propagating houses, where it remained for two years before showing any signs of growth. This appears to be a new species of *Dioon*.

Dr. Merrill exhibited a number of tropical fruits obtained on his recent trip to Jamaica.

The Club adjourned at 5:10 P. M.

PERCY WILSON,  
*Secretary*

FEBRUARY 9, 1909

The Club met at the American Museum of Natural History at 8:15 P. M. and was called to order by President Rusby. The attendance was 20. After the reading and approval of the minutes of the preceding meeting, resignations were read and accepted from Mr. LeRoy Abrams, Mr. W. Ralph Jones, and Mr. John M. Holzinger.

\* Printed in full in this issue of TORREYA. — EDITOR'S NOTE.

Mr. Ewen MacIntyre was nominated for membership.

The announced paper of the evening on "The Rubber Forests of Mexico" was then presented by Dr. H. H. Rusby. The lecture was illustrated by lantern slides made from photographs, many of which were obtained by the speaker while in the field. This paper has been printed in full in the January number of the *Journal of the New York Botanical Garden*, and an abstract accompanied by illustrations will appear at an early date in *TORREYA*.

The meeting adjourned at 9:40 P. M.

PERCY WILSON,  
*Secretary*

## OF INTEREST TO TEACHERS

### COLLEGE ENTRANCE BOTANY

A fourth report on the college entrance course in botany has been formulated by the Committee on Education of the Botanical Society of America. In authorizing the publication of this report \* the Society urges that a year's thorough work in botany be accepted by *all* colleges as an "entrance option" for under the present educational conditions it is "practically impossible for any subject to receive suitable consideration in the three upper years of most high schools unless it can be counted for entrance to college."

The "ten principles upon which the course is formulated" are given below, and the general statement of the subject-matter will, for lack of space in this issue, be printed next month. The preparation of such a course of study is not an easy matter; and the work of the members of the committee, Professor W. F. Ganong, of Smith College, Professor F. E. Lloyd, of the Alabama Polytechnic Institute, and Professor H. C. Cowles, of the University of Chicago, should receive our hearty appreciation. Thanks are also due the Society for the effect such a course will have upon the teaching of botany in the high schools—both directly and indirectly. What do the teachers of high school

\* The School Review, Vol. 16. November, 1908.